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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/634,163	GRAETTINGER, THOMAS M.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Fetsum Abraham	2826	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the examiner's amt following the faxed amt by applicant.
2. ☒ The allowed claim(s) is/are 22-91.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                     | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

### **Examiner's comment**

It is to be recalled that there had been consecutive telephone conversations between Mr. Timothy B. Clise and examiner F. Abraham for possible amendment to overcome the figure 3 prior art structure in PN: 5,834,348. The examiner's interpretation of layer (30) as being the analogous stud coupled to the conductive plug (25) was positively accepted by the other party. As a result, both parties were engaged in constructive conversations.

Clearly, layer (30) of the prior art is partially embedded by the first insulation layer (23) and also extends over the insulation layer into the second insulation layer (40). However, it was clear that the portion of the stud embedded in the first insulation layer was not an intentional design parameter but probably an unavoidable consequence associated with the etching process in the development of the structure. That fact also made the structure vulnerable by the claimed structure formed by intentional design but amendment was indeed necessary to overcome it at physical level because it reads on the structure as originally claimed at least so far as claims 22,51,54 and 56 were concerned.

It is now believed that the amendment faxed to the examiner has resolved the issue by overcoming the prior art. Therefore, the faxed amendment of claims 22,51,54 and 56 has been acknowledged, approved and entered.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

The term "partially" has been added before "embedded" in line 3 of claims 59 and lines 3 and 7 of claim 67.

As far as the examiner's amendment of line 7 of claim 63 is concerned, said seed film could not have been below and on the stud and at the same time embedded in the first dielectric stack because the portion of the seed on the stud is outside the vicinity of the first dielectric stack. Therefore, it was necessary to add the expression "partially" in order to correctly define the structure.

**Claims 22-91 have been allowed**

**The following is an examiner's statement of reasons for allowance:**

The claimed stud capacitor structure of claims 22,51,54,56 having a plug and a stud coupled to the plug, at least one-third of its body embedded in a first dielectric stack and extending into a second dielectric stack, and the overall structure designed to overcome the problems associated with relevant prior arts as discussed in the "background" portion of the specification is not taught or rendered obvious by the prior arts.

As for claims 35, the same structure as above with the specific conducting materials, the overall structure designed to overcome the problems associated with relevant prior arts as discussed in the "background" of the specification is not taught or rendered obvious by the prior arts.

As for claim 41, a similar to above capacitor with the specific conducting materials added to said seed and its relationship with said corridor and the protective film associated with the structure, the overall structure designed to overcome the problems associated with relevant prior arts as discussed in the "background" of the specification is not taught or rendered obvious by the prior arts.


As for claims 59,63 a similar to above capacitor with the specific conducting materials with said seed formed on and below said stud, the overall structure designed to overcome the problems associated with relevant prior arts as discussed in the "background" of the specification is not taught or rendered obvious by the prior arts.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fetsum Abraham whose telephone number is: 571-272-1911. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915.

Fetsum Abraham



9/30/05